

**REMARKS**

The application was filed with claims 1-44. Claims 1-44, 46, and 54-69 were canceled by previous amendments. Claims 68-82 were added by previous amendments. No claims have been canceled herein. No new claims have been added herein. Therefore, claims 45, 47-53, and 70-82 are pending. Claim 70 has been amended herein.

***Supplemental Information Disclosure Statement***

Enclosed herewith is a Supplemental Information Disclosure Statement with PTO Form-1449. Consideration of the information cited therein and indication of same is respectfully requested.

***Amendments to the Application***

As requested in a previous response to the Office Action mailed June 13, 2006, please amend the Attorney Docket Number to 03269.0109U1.

***Amendments to the Claims***

Claim 70 has been amended to recite, *inter alia*, a separate second topical treating composition. No new matter has been added by the new claims. Support for this amendment can be found throughout the specification, as filed, for example at pages 17-19 and 29.

***Arguments made in Office Action***

The Office Action disagrees that the pending claims are nonobvious over the cited references for four reasons:

- **Hydrolysis of Tannic Acid**

The Office Action contends that, because gallic acid is acquired by the hydrolysis of tannic acid, it would have been obvious to arrive at the gallic acid content (*i.e.*, "less than about 1.0 parts by weight") of claim 45, absent a showing to the contrary.

Applicant respectfully disagrees. As demonstrated in the enclosed declaration, *and as would have been known to those of skill in the art*, the hydrolysis of tannic acid increases the amount of free gallic acid present in the composition rather than to provides the claimed compositions having the recited low levels of free gallic acid. That is, when considering the hydrolysis of tannic acid, the knowledge of skilled artisans instead teaches away from selecting the low levels of gallic acid (*i.e.*, “less than about 1.0 parts by weight”) recited in claim 45 and those claims depending therefrom. Consequently, the general knowledge of those of skill would not provide motivation to arrive at the claimed ranges of gallic acid.

- **Optimization of Unrecognized Result-effective Variables**

The Office Action contends that, because it is well known to the skilled artisan to optimize percentages, it would have been obvious to arrive at the claimed gallic acid content (*i.e.*, “less than about 1.0 parts by weight”) of claim 45, absent a showing to the contrary.

Applicant respectfully disagrees. It is long established that, when the general conditions (*e.g.*, a parameter) of a claim are disclosed in the prior art, it is obvious to discover the optimum or workable ranges for those conditions (*i.e.*, that particular parameter) by routine experimentation. MPEP § 2144.05(II)(A) (citing *In re Aller*, 220 F.2d 454 (CCPA 1955)). However, it is also well-established that a “particular parameter must first be recognized as a result-effective variable, *i.e.*, a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation.” MPEP § 2144.05(II)(B) (citing *In re Antonie*, 559 F.2d 618 (CCPA 1977) (emphasis added)). Thus, the nonobvious optimization of unrecognized result-effective variables is an exception to the general rule:

In *In re Aller* . . . the court set out the rule that the discovery of an optimum value of a variable in a known process is normally obvious. We have found exceptions to this rule in cases where the results of optimizing a variable, which was known to be result effective, were unexpectedly good. . . . This case, in which the parameter optimized was not recognized to be a result-effective variable, is another exception.

*In re Antonie*, 559 F.2d 618, 620 (CCPA 1977) (emphasis added).

Thus, claimed sub-ranges are patentable in at least two situations. First, claimed sub-ranges are not obvious when results are unexpectedly good. Second, claimed sub-ranges are not obvious when the prior art fails to recognize the optimized parameter to be result-effective.\* The law is replete with cases illustrating this distinction:

In *In re Aller*, 220 F.2d 454 (CCPA 1955), a claimed process reciting a temperature of 40-80 °C and an acid concentration of 25-70% was held to be *prima facie* obvious over a reference process disclosing a temperature of 100 °C and an acid concentration of 10%. Thus, the effectiveness of temperature and acid concentration were recognized by the prior art to be result-effective.

In *In re Peterson*, 315 F.3d 1325 (Fed. Cir. 2003), a claimed superalloy consisting essentially of about 1-3% rhenium and about 14% chromium was held to be *prima facie* obvious over a reference disclosing a superalloy having 0-7% rhenium and 3-18% chromium. Thus, these concentrations of rhenium and chromium were recognized by the prior art to be result-effective.

In *In re Antonie*, 559 F.2d 618 (CCPA 1977), a claimed wastewater treatment device with an optimum ratio of tank volume to contactor area was held to be not *prima facie* obvious over a reference disclosing the basic device in question but failing to teach a ratio of tank volume to contactor area. Thus, this ratio was not recognized by the prior art to be result-effective; therefore, the claims were not obvious. Therefore, the critical distinction between disclosures which render a claimed range *prima facie* obvious and disclosures that do not lies in whether the prior art recognized the effectiveness of the variable in achieving the result. The Court explained that to argue otherwise “overlooks the last sentence of §103”:

The PTO and the minority appear to argue that it would always be obvious for one of ordinary skill in the art to try varying every parameter of a

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\* It is noteworthy that the Patent Law acknowledges the nonobviousness of unrecognized result-effective variables separately from the nonobviousness of unexpectedly good results. Consequently, it is legally unnecessary to demonstrate unexpectedly good results for claimed sub-ranges wherein the result-effectiveness was unrecognized.

system in order to optimize the effectiveness of the system even if there is no evidence in the record that the prior art recognized that particular parameter affected the result. As we have said many times, obvious to try is not the standard of 35 USC 103.

*In re Antonie*, 559 F.2d 618, 620 (CCPA 1977) (internal citations omitted).

With respect to the pending claims, the Office Action has failed to establish that any of the cited references – much less the skilled artisan – recognized that gallic acid content within tannic acid could achieve a recognized result. As such, while it may be arguably within the ordinary skill in the art to optimize a tannic acid concentration in view of the cited references, there is simply no disclosure in any of the cited references that evidences a recognition of any relationship whatsoever between gallic acid concentration and effectiveness of stain resistance. Thus, a claim reciting a gallic acid content of less than about 1.0 parts by weight cannot be *prima facie* obvious.

- **Alleged Combination of References**

The Office Action contends that there is sufficient motivation to combine the cited references simply because “the references of record are related to treatment compositions as suggested by the most comprehensive claim and said references combine applicant’s tannic acid and other ingredients.” *See* Office Action mailed October 4, 2006, at page 7-8, paragraph 18.

Applicant respectfully disagrees. It is well-established that “[o]bviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.” *In re Geiger*, 815 F.2d 686, 688 (Fed. Cir. 1987). The mere fact that components are known in the art individually for the same purpose does not inevitably render their combination *prima facie* obvious. As explained by the Federal Circuit:

Based upon the prior art and the fact that each of the three components of the composition used in the claimed method is conventionally employed in the art for treating cooling water systems, the board held that it would have been *prima facie* obvious, within the meaning of 35 U.S.C. §103, to employ these components in combination for their known functions and to optimize the

amount of each additive. . . . Appellant contends that the PTO failed to establish a *prima facie* case of obviousness [because] the PTO's position represented hindsight reconstruction or, at best, established that it would have been "obvious to try" various combinations . . . . We agree with appellant.

*In re Geiger*, 815 F.2d 686, 687-88 (Fed. Cir. 1987).

Thus, it is not automatically sufficient to combine known components conventionally employed for a purpose (*e.g.*, treating cooling water systems or stain treatment compositions). Absent some suggestion to combine from the references themselves or from the knowledge generally available to one of ordinary skill in the art, the cited references cannot be used in combination to establish a *prima facie* obviousness rejection.

- **Unexpected Superior Results**

The Office Action alleges that the results presented in arguments in the previous response to an Office Action are "not unexpected because the prior art of record, specifically De Lathauwer, teaches that any commercial gallic acid may be used, which includes lower and upper amounts of tannic acid contents" and that "applicant does not compare the closest prior art with the claimed invention [but instead] assumes that certain examples encompass the prior art of record and assumes criticality has been established." *See* Office Action mailed October 4, 2006, at page 8, paragraph 19.

Applicant respectfully disagrees with both allegations. First, Applicant contends that De Lathauwer does not "teach[] that any commercial gallic acid may be used," as alleged by the Office Action. More specifically, the Office Action seems to confuse gallic acid and tannic acid. De Lathauwer does disclose that "any commercial tannic acid can be used." *See* De Lathauwer at column 2, lines 66-67 (emphasis added). A close reading of De Lathauwer, however, reveals that this reference is silent with respect to gallic acid content, instead only disclosing that gallic acid, digallic acid, and trigallic acid can be substituent groups present within tannic acid. *See* De Lathauwer at column 2, lines 48-51. As such, this reference provides absolutely no teaching as to free gallic acid content present in the commercially available tannic acid.

Because De Lathauwer completely fails to address free gallic acid content, the superior results due to the claimed gallic acid content that are demonstrated in the enclosed declaration are unexpected to those of skill in the art at the time the invention was made. Further, because De Lathauwer completely fails to address free gallic acid content, Applicant has compared the superior results obtained from the claimed gallic acid content range to the gallic acid contents in a variety of commercially available tannic acids (*e.g.*, “any commercial tannic acid can be used.”)

Moreover, the enclosed declaration establishes criticality (*i.e.*, results are due to, and commensurate throughout, the range) of the claimed range by comparing stain resistance when using tannic acids having gallic acid contents within the claimed range (*e.g.*, 0.96%) to tannic acids having gallic acid contents outside the claimed range (*e.g.*, 2.87%, 5.26%, and 12.05%). Direct comparison of the claimed subject matter (*e.g.*, 0.96%) to the closest example outside the claimed range (*e.g.*, 2.87%) reveals substantially superior results.

***Claim Rejections under 35 U.S.C. § 103***

The Office Action has rejected all pending claims under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,738,688 to De Lathauwer (hereinafter “De Lathauwer”); over U.S. Patent No. 4,482,646 to Gamblin (hereinafter “Gamblin”); over U.S. Patent No. 4,094,701 to Fekete (hereinafter “Fekete”); over De Lathauwer in view of U.S. Patent No. 5,520,962 to Jones, Jr. (hereinafter “Jones”); or over De Lathauwer in view of U.S. Patent No. 5,403,362 to Gurley (hereinafter “Gurley”).

As an initial matter, Applicant notes that no objection or rejection under 35 U.S.C. § 112 or 35 U.S.C. § 102 has now been applied to the pending claims, thereby indicating that the claims are definite, enabled, and novel. Consequently, Applicant understands that the sole remaining issue concerns the nonobviousness of the pending claims.

- **De Lathauwer**

The Office Action has rejected claims 45, 47-50, and 52 as obvious over De Lathauwer. Applicant disagrees with these rejections.

Claim 45 recites, *inter alia*, tannic acid having a gallic acid content of less than about 1.0 parts by weight. Likewise, claims 47-50 and 52, which depend from 45, also recite this element. De Lathauwer is silent with respect to this element.

As set forth above, it is not *prima facie* obvious to optimize parameters unrecognized as result-effective variables. The Office Action has presented absolutely no evidence that gallic acid content is recognized by those of skill in the art as having any effect whatsoever on stain resistance. Consequently, the pending claims are not *prima facie* obvious.

If, however, a *prima facie* case had been established, *which was not*, “the presumption will be rebutted if it can be shown . . . that there are new and unexpected results relative to the prior art.” *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1322 (Fed. Cir. 2004). As evidenced in the enclosed declaration, aqueous treating compositions comprising tannic acid having a gallic acid content of less than about 1.0 parts by weight provide fiber, yarn or carpet having unexpected and substantially superior stain resistance. Accordingly, claims 45, 47-50, and 52, which each recites the element of tannic acid having a gallic acid content of less than about 1.0 parts by weight, are not obvious, and thus allowable.

- **Gamblin**

The Office Action has rejected claims 45 and 47 as obvious over Gamblin. Applicant disagrees with these rejections. Again, claims 45 and 47 recite, *inter alia*, tannic acid having a gallic acid content of less than about 1.0 parts by weight. Gamblin is silent with respect to this element. For the same reasons set forth above (*see De Lathauwer, supra*), claims 45 and 47 are neither *prima facie* obvious nor obvious over Gamblin.

- **Fekete**

The Office Action has rejected claims 45 and 47 as obvious over Fekete. Applicant disagrees with these rejections. Again, claims 45 and 47 recite, *inter alia*, tannic acid having a gallic acid content of less than about 1.0 parts by weight. Fekete is silent with respect to this element. For the same reasons set forth above (*see De Lathauwer, supra*), claims 45 and 47 are neither *prima facie* obvious nor obvious over Fekete.

- **De Lathauwer in view of Jones**

The Office Action has rejected claims 51, 53, 70-76, and 78-82 as obvious over De Lathauwer in view of Jones. Applicant disagrees with these rejections.

Claims 70-76 and 78-79 recite, *inter alia*, a first aqueous treating composition comprising tannic acid; and a separate second topical treating composition comprising a fluorochemical. De Lathauwer is silent with respect to a composition comprising a fluorochemical. Jones is silent with respect to a composition comprising tannic acid. The Office Action asserts that it would have been obvious to combine the teachings of De Lathauwer and Jones to arrive at the pending claims, arguing essentially that it would be obvious because the two references are directed to the same objective. Applicant respectfully disagrees.

As set forth above in detail (*see Alleged Combination of References, supra*), the Office Action has failed to provide any motivation or suggestion for the alleged combination of references, specifically, any suggestion to combine the teachings of De Lathauwer with the teachings of Jones. However, even assuming *arguendo* that such suggestion was present – *which is not* – this suggestion does not provide for a two-part aqueous treatment, as recited in claim 70. Thus, a claim reciting the combination of a first aqueous treating composition comprising tannic acid and a separate second topical treating composition comprising a fluorochemical cannot be *prima facie* obvious.

Furthermore, even assuming *arguendo* that such burden had been met by the Office Action, as demonstrated in the enclosed declaration, the recited two two-part aqueous treatment



provides unexpected and substantially superior stain resistance when applied to a fiber, yarn, or carpet. Thus, in view of these data, the combination of a first aqueous treating composition comprising tannic acid and a separate second topical treating composition comprising a fluorochemical is not obvious.

Likewise, claims 80-82 each recite a fiber, yarn or carpet comprising a tannic acid and a topically applied fluorochemical. As before, the Office Action asserts that it would have been obvious to combine the teachings of De Lathauwer and Jones to arrive at the pending claims, arguing essentially that it would be obvious because the two references are directed to the same objective. Again, Applicant respectfully disagrees because the Office Action has failed to establish any suggestion to combine the teachings of De Lathauwer with the teachings of Jones (*see In re Geiger*, 815 F.2d 686, 688 (Fed. Cir. 1987)) and because the fiber, yarn, or carpet exhibits unexpected and substantially superior stain resistance (*see* enclosed declaration). Thus, a claim reciting a fiber, yarn or carpet comprising a tannic acid and a topically applied fluorochemical is neither *prima facie* obvious nor obvious.

Claims 51, 53, 72, and 82 each recite, *inter alia*, tannic acid having a gallic acid content of less than about 1.0 parts by weight. As set forth above, De Lathauwer cannot render obvious claims reciting this element. As Jones is also silent with respect to this element, Jones cannot remedy this deficiency. Thus, for the same reasons set forth above (*see* De Lathauwer, *supra*), claims 51, 53, 72, and 82 are neither *prima facie* obvious nor obvious over De Lathauwer in view of Jones. Likewise, claims 71 and 81 each recite the element of a tannic acid with a gallic acid content of less than about 3.0 parts by weight. For reasons analogous to those set forth above (*see* De Lathauwer, *supra*; *see also* Optimization of Unrecognized Result-effective Variables, *supra*), these claims neither *prima facie* obvious nor obvious over De Lathauwer in view of Jones.

- **De Lathauwer in view of Gurley**

While the Office Action has expressly rejected claim 77 as obvious over De Lathauwer in view of Gurley, Applicant presumes that it is the intent of the Office Action to reject claim 77 as

obvious over De Lathauwer in view of Jones and further in view of Gurley. In either case, Applicant disagrees with the rejection.

Again, claim 70 recites, *inter alia*, a first aqueous treating composition comprising tannic acid; and a separate second topical treating composition comprising a fluorochemical. As set forth in detail above, De Lathauwer is silent with respect to a composition comprising a fluorochemical. Jones is silent with respect to a composition comprising tannic acid. Also as set forth above, there is no suggestion to combine the teachings of De Lathauwer and Jones; therefore, a claim reciting the combination of a first aqueous treating composition comprising tannic acid and a separate second topical treating composition comprising a fluorochemical cannot be *prima facie* obvious. Moreover, Gurley merely disclosed the use of stannous chloride and does not remedy the deficiencies in the alleged combination of De Lathauwer and Jones. For reasons analogous to that set forth in De Lathauwer in view of Jones, *supra*, there is no suggestion to combine the teachings of De Lathauwer, Jones, and Gurley; therefore, a claim reciting the combination of a first aqueous treating composition comprising tannic acid, wherein the first composition further comprises a crosslinking agent comprising stannous chloride, and a separate second topical treating composition comprising a fluorochemical cannot be *prima facie* obvious. Thus, for the same reasons set forth above (*see* De Lathauwer in view of Jones, *supra*), claim 70 are neither *prima facie* obvious nor obvious over De Lathauwer in view of Jones and further in view of Gurley.


Likewise, any alleged *prima facie* obviousness of claim 77 would be overcome by the showing of unexpected and substantially superior results provided in the enclosed declaration. In view of these data, the combination of a first aqueous treating composition comprising tannic acid, wherein the first composition further comprises a crosslinking agent comprising stannous chloride, and a separate second topical treating composition comprising a fluorochemical is not obvious and is, therefore, allowable.

CONCLUSION

In light of the above arguments, the claims are believed to be allowable, and Applicant respectfully requests notification of same. The Examiner is invited and encouraged to directly contact the undersigned if such contact may enhance the efficient prosecution of the application to issuance.

A three-month shortened statutory period was set for response, nominally ending January 4, 2007. Also enclosed herewith is a Request for Two-Month Extension of Time, which extends the due date to March 4, 2007. Therefore, this paper is timely. Payment in the amount of \$630.00 (reflecting a \$180.00 fee for the enclosed Supplemental Information Disclosure Statement and a \$450.00 fee for the Two-Month Extension of Time) is enclosed herewith. The payment is to be charged to a credit card and is authorized by the signed, enclosed document entitled: Credit Card Payment Form PTO-2038. This amount is believed to be correct; however, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 14-0629.

Respectfully submitted,  
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I hereby certify that this correspondence, including any items indicated as attached or included, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

  
D. Brian Shortell, JD, PhD

February 22, 2007  
Date